Patent Claims

1. A control device having
- a plurality of inputs for respectively receiving an input real value (F_i),
- a plurality of outputs for respectively outputting a digital output value (Y_j),
- a memory for storing setpoint values (S_i) relating to the inputs and outputs, and
- an allocator for allocating a digital output value (Y_j) to one of the digital outputs as a function of a comparison of at least one of the input real values (F_i) with a corresponding setpoint value,
characterized in that
- an independence state value (D) can be applied to at least one of the setpoint values (S_i) in the memory, and
- the allocation of a digital output value (Y_j) to one of the digital outputs can be carried out by the allocator independently of the at least one input real value (F_i) whose allocated setpoint value (S_i) has the independence state value (D).

2. The control device as claimed in claim 1, which comprises a first evaluator for converting input raw values (R_i) into digital input values (X_i) for the further processing as input real values.

3. The control device as claimed in claim 2, which comprises a second evaluator, connected downstream of the first, for allocating the digital input values (X_i) to logical input states (F_i) for the further processing as input real values.

4. The control device as claimed in one of the preceding claims, wherein the setpoint values (S_i) respectively have one of the state values 1, 0 and independence state value.

5. The control device as claimed in one of the preceding claims, wherein a plurality of sets of setpoint values ($S_{i,n}$) can respectively be stored for an output value or set of output values in the memory.

6. The control device as claimed in one of the preceding claims, which has a safety instrument by which the equipment to be controlled can be switched to a safety state.

7. The control device as claimed in claim 6, wherein the safety instrument switches to the safety state if the input real values (F_i) deviate from the corresponding setpoint values ($S_{i,n}$) for more than a predetermined time.

8. The control device as claimed in claim 6 or 7, wherein the sets of setpoint values ($S_{i,n}$) are checked with a check sum at fixed time intervals.

9. A method for controlling equipment by
- receiving a plurality of input real values (F_i),
- providing setpoint values ($S_{i,n}$) relating to inputs and outputs,
- establishing a digital output value (Y_j) as a function of a comparison of at least one of the input real values (F_i) with a corresponding one of the setpoint values ($S_{i,n}$), and
- outputting the digital output value (Y_j),
characterized by
- application of an independence state value (D) to at least one of the setpoint values (S_i), and
- establishment of the digital output value (Y_j) independently of the at least one input real value (F_i) whose allocated setpoint value ($S_{i,n}$) has the independence state value (D).

10. The method as claimed in claim 9, wherein the reception of a plurality of input real values (F_i) comprises conversion (S1) of input raw values (R_i) into digital input values (X_i) for the further processing as input real values (F_i).

11. The method as claimed in claim 10, wherein the digital input values (X_i) are allocated to logical input states for the further processing (S2).

12. The method as claimed in one of claims 9 to 11, wherein the setpoint values ($S_{i,n}$) respectively have one of the state values 1, 0 and independence state value (D).

13. The method as claimed in one of claims 9 to 12, wherein a plurality of sets of setpoint values ($S_{i,n}$) are respectively provided for an output value (Y_j) or set of output values.

14. The method as claimed in one of claims 9 to 13, wherein the equipment to be controlled is switched to the safety state if the input real values (F_i) deviate from the corresponding setpoint values ($S_{i,n}$) for more than a predetermined time.

15. The method as claimed in one of claims 9 to 14, wherein the setpoint values ($S_{i,n}$) are checked with a check sum at fixed time intervals, and the equipment to be controlled is optionally switched to a safety state.